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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,060	06/23/2005	Adrian George Russell	540-561	4532
23117 7590 07/09/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
SWIATEK, ROBERT P				
ART UNIT		PAPER NUMBER		
3643				
NOTIFICATION DATE		DELIVERY MODE		
07/09/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

# Office Action Summary

**Application No.**

10/531,060

**Applicant(s)**

RUSSELL, ADRIAN GEORGE

**Examiner**

Rob Swiatek

**Art Unit**

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 and 19 is/are pending in the application.  
4a) Of the above claim(s) 2-11, 15-17 and 19 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 12-14 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date 4-12-05: 6-23-05  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

As a result of applicant's election of Group I, species A, and subspecies A', claims 1, 12-14 will be given an action on the merits. Claims 2-11, 15-17, 19 have been withdrawn from consideration; claim 18 was canceled.

In the response to the restriction requirement, applicant states "Groups II and III would also appear to be directed to the same invention as Group I"; yet, while claim 1 of Group I recites "[a] plurality of sufficient closely-packed functional units," claim 2 of Group II recites only "a receiving volume . . . being defined by the requirement *to accommodate* a predetermined sufficient closely-packed formation of interconnected functional units" (emphasis added) and claim 3 defines "a supporting structure *for* mechanically supporting a number of interconnected functional units" (emphasis added) that are "arranged to provide a sufficient closely-packed modular formation." Neither claim 2 nor, arguably, claim 3 positively recite "closely-packed functional units." In the event line 4 of claim 3 is interpreted as positively requiring the presence of functional units, recitation of their being "arranged to provide" a closely-packed modular formation introduces ambiguity into an already vague environment and is not deemed equivalent to *closely-packed functional units*.

While the restriction requirement lists claims 1, 12-17, 19 as being generic, clearly this is with respect to species A-C and irrespective of their further subdivision into subspecies A'-D'. As set forth in the requirement, the four subspecies are believed to represent four patentably distinct embodiments. Moreover, although claim 19 is listed as being generic with regard to the

species, it stands apart as a separate invention constituting Group IV. Applicant chose Group I, as noted above, for prosecution. It is noted applicant has not argued species A-C or subspecies A'-D' are obvious variants of one another.

The restriction requirement is hereby repeated and made final. An action on the merits of claims 1, 12-14 follows.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Basuthakur et al. (US 6,003,817). The Basuthakur et al. satellite 20 includes a number of functional units 44, 52, 60, 78 closely packed into and onto a non-planar payload module or bus 32. Heat pipes (not shown, but see column 5, lines 42, 43, of Basuthakur et al.) interconnect thermal panels 24, 28, 70 with other portions of the satellite to mitigate high temperatures within the satellite and operate in conjunction with fluid transfer valves 98 and electronic processor 93. The thermal components of the Basuthakur et al. satellite collectively “counter excessive temperature fluctuation” within the module 32 (see column 5, lines 59-64, of Basuthakur et al.) so as to achieve onboard temperature stability.

Claims 1, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Caplin et al. (US 5,839,696). Non-planar module 28 of Caplin et al. includes closely-packed functional units 30, heat pipes 46, and circuitry engendered by the presence of thermo-energy dissipating units 40.

The abstract of the disclosure is objected to because in line 1, "There is disclosed a" should be changed to -A-. Moreover, the abstract should be rewritten as a single paragraph. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: On page 8, line 23, "equipments," should be changed to -equipment-.

Appropriate correction is required.

Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The patents to Mackey et al. (US 5,351,746), Epstein et al. (US 5,950,965), and Gelon et al. (US 6,073,888) have been cited to provide additional examples of modular spacecraft.

/Rob Swiatek/

Primary Examiner, Art Unit 3643

Ph.: 571/272-6894  
2 July 2008